

REMARKS

Claims 1-27 are pending in the instant application. Claims 1, 10 and 19 are amended herein. Claims 1-27 are rejected.

103 Rejections

Claims 1-5, 7, 9-14, 16, 18-23, 25 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nilsson, Introduction to PSpice Manual for Electric Circuits Using OrCad Release 9.1) (hereinafter "Nilsson"), Lawman et al. and Williams. Applicants have reviewed the cited references and respectfully submit that the embodiments of the claimed invention that are set forth in Claims 1-5, 7, 9-14, 16, 18-23, 25 and 27 are neither anticipated nor rendered obvious by Nilsson, Lawman et al. and Williams.

The Examiner is respectfully directed to independent Claim 1 which is drawn to a method of API generation for an electronic circuit. Claim 1 is reproduced in its entirety below for the convenience of the Examiner.

1. A method of API (application programming interface) generation for an electronic circuit comprising:
displaying a graphical user interface through which a user can initiate generation of said a new API, wherein said user utilizes said new API to customize functionality of said electronic circuit;
selecting a component from a plurality of components for placement in said electronic circuit, said component for executing an implementable embedded function in said electronic circuit;
configuring said selected component via said graphical user interface;
storing descriptive data relative to said selected component and said configuration;
utilizing said interface to access said descriptive data; and
initiating said graphical user interface to invoke a processing of said descriptive data causing an automatic generation of said new API, in response to a user input, said new API comprising a device-interface and interrupt activity framework for source programming and controlling said embedded function of said component in said electronic circuit through user interaction with said new API wherein source code is compiled and built in response to the selection of a graphical element.(emphasis added)

Independent Claims 10 and 19 recite limitations similar to those recited in Claim 1. Claims 2-5, 7 and 9 depend from independent Claim 1 and recite additional limitations of the claimed invention. Claims 11-14, 16 and 18 depend from independent Claim 10 and recite additional limitations of the claimed invention. Claims 20-23, 25 and 27 depend from independent Claim 19 and recite additional limitations of the claimed invention.

Nilsson in view of Lawman et al. and Williams does not anticipate or render obvious the embodiments of the claimed invention as set forth in independent Claims 1, 10 and 19. Nilsson in view of Lawman et al. and Williams is deficient as the primary reference Nilsson does not teach or suggest all of the limitations of the aforementioned Claims and the secondary references Lawman et al. and Williams do not remedy the deficiencies of Nilsson. In particular, Nilsson does not teach or suggest in a method of application programming interface (API) generation for an electronic circuit, an API that includes a framework for “source programming and controlling” an “embedded function” of a component of an electronic circuit through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” as recited in Claim 1 (Claims 10 and 19 recite similar limitations). And, neither Lawman et al. nor Williams teaches or suggests these limitations to remedy the deficiencies of Nilsson.

Claims 1, 10 and 19 have been amended to include the limitation “wherein source code is completed and built in response to the selection of a graphical element.” Support for the newly added limitation can be found in Applicants’ specification at page 24, lines 13-15. It is important to note that the newly added limitation specifically sets forth how source code upon which source programming is based is built and compiled. This limitation (along with the others recited in the Claims) must be taught or suggested by the cited combination in order for a proper prima facie case for rejection to be made. Applicants respectfully submit that the newly added limitation is not taught or suggested anywhere by the cited combination of references. If a rejection based on

the cited combination is maintained Applicants respectfully request that the location in the references where such is taught or suggested be identified.

In the “Response to Arguments” section of the outstanding Office Action it is contended that the cited combination teaches a system that allows “a user to interface with the created circuit, effectively creating a circuit design...” which is equivalent to the recited “source programming and controlling” and embedded function. Applicants respectfully disagree. Applicants respectfully submit that the mere existence of an interface accommodated circuit design functionality does not suggest a source programming functionality. A source programming functionality is very different from a circuit design functionality. Accordingly, a mere disclosure of such is inadequate to teach or suggest source programming capability. Consequently, Applicants respectfully submit that the referenced disclosure of the cited references does not teach or suggest a source programming functionality.

It is admitted in the Office Action that Nilsson does not teach or suggest the aforementioned limitations of Claim 1. Applicants respectfully agree and submit that this is an apt characterization of a deficiency of Nilsson. Accordingly, Applicants respectfully submit that nowhere in the Nilsson reference is an API that includes a framework for source programming and controlling an embedded function of a component of an electronic circuit through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” taught or suggested as set forth in Claim 1 (Claims 10 and 19 recite similar limitations).

Lawman et al. does not teach or suggest a modification of Nilssen that would remedy the deficiencies of Nilssen outlined above. In particular, Nilsson does not teach or suggest in a method of API generation for an electronic circuit, an API that includes a framework for “source programming and controlling” an “embedded function” of a component of an electronic circuit

through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” as set forth in Claim 1 (Claims 10 and 19 contain similar limitations). Lawman et al. discloses a system that provides concurrent electronic circuit design and implementation. The Lawman et al. system provides real time design feedback to a user of a system for designing an electronic circuit. As such, the focus of the Lawman et al. reference is the provision of feedback data to a circuit design system user related to design implementation during the design process. Lawman et al. is not concerned with the provision of a framework for source programming and controlling the function of a circuit component through user interaction with an API or how source code for such programming is compiled and built as is set forth in Applicants’ Claims. Accordingly, Applicants respectfully submit that nowhere in the Lawman et al. reference is an API that includes a framework for source programming and controlling an embedded function of a component of an electronic circuit through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” taught or suggested as set forth in Claim 1 (Claims 10 and 19 recite similar limitations)

Williams does not teach or suggest a modification of Nilsson and Lawman et al. that would remedy the deficiencies of Nilsson and Lawman et al. outlined above. In particular, Williams does not teach or suggest in a method of API generation for an electronic circuit, an API that includes a framework for “source programming and controlling” an “embedded function” of a component of an electronic circuit through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” as recited in Claim 1 (Claims 10 and 19 recite similar limitations). Williams discloses a dissimilar method and apparatus for developing and placing a circuit design. Williams discloses a system that enables the development of placement characteristics of a circuit design in conjunction with the development of functional aspects of a circuit. Furthermore, Williams discloses that the circuit characteristics are defined through programming in a hardware definition language (HDL). This stands in marked contrast with the system set forth in

Applicant's claims that provides a platform for source programming of components of a circuit through interaction with an API. Accordingly, Applicants respectfully submit that nowhere in the Williams reference is an API that includes a framework for source programming and controlling an embedded function of a component of an electronic circuit through user interaction with the API "wherein source code is compiled and built in response to the selection of a graphical element" taught or suggested as recited in Claim 1 (Claims 10 and 19 recite similar limitations).

With regard to Claim 2, Applicants respectfully submit that nowhere in the Nilsson, Lawman et al., and Williams references is a method of API generation for an electronic circuit that includes the above discussed limitation of Claim 1 and further includes the limitation "wherein said configuring said selected component comprises placing said selected component in said electronic circuit" as is recited in Claim 2 taught or suggested. With regard to Claim 3, Applicants respectfully submit that nowhere in the Nilsson, Lawman et al., and Williams references is a method of API generation for an electronic circuit that includes the above discussed limitation of Claim 1 and further includes the limitation "wherein said configuring said selected component further comprises setting parameters of said selected component, said parameters relative to said function of said component and to said electronic circuit" as is recited in Claim 3 taught or suggested.

With regard to Claim 4, Applicants respectfully submit that nowhere in the Nilsson, Lawman et al., and Williams references is a method of API generation for an electronic circuit that includes the above discussed limitation of Claim 1 and further includes the limitation "wherein said configuring said selected component further comprises selecting pin values for connecting said component to said electronic circuit" as is recited in Claim 4 taught or suggested. With regard to Claim 5, Applicants respectfully submit that nowhere in the Nilsson, Lawman et al., and Williams references is a method of API generation for an electronic circuit that includes the above discussed limitation of Claim 1 and further includes the limitation "wherein said new

API comprises header files” as is recited in Claim 5 taught or suggested.

With regard to Claim 7, Applicants respectfully submit that nowhere in the Nilsson, Lawman et al., and Williams references is a method of API generation for an electronic circuit that includes the above discussed limitation of Claim 1 and further includes the limitation “wherein said new API further comprises include files” as is recited in Claim 7 taught or suggested. With regard to Claim 9, Applicants respectfully submit that nowhere in the Nilsson, Lawman et al., and Williams references is a method of API generation for an electronic circuit that includes the above discussed limitation of Claim 1 and further includes the limitation “wherein said interface comprises a plurality of windows” as is recited in Claim 9 taught or suggested. It should be appreciated that Claims 11-14, 16 and 18 dependent on Claim 10, and Claims 20-23, 25 and 27 dependent on Claim 19, recite limitations similar to those that are recited in Claims 2-5, 7 and 9, whose deficiencies are discussed above.

Because of the above outlined deficiencies of the cited combination, Applicants respectfully submit that Nilsson in view of Lawman et al. and Williams does not provide an adequate basis for rejection of Claims 1, 10 and 19 under 35 U.S.C. §103 and, as such, Claims 1, 10 and 19 are allowable. Accordingly, the Applicants respectfully submit that Claims 2-5, 7 and 9, 11-14, 16 and 18, and 20-23, 25 and 27 dependent on Claims 1, 10 and 19 respectively are likewise allowable as being dependent on allowable base claims.

Claims 6, 15 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nilsson, Lawman et al., Williams and Hsu (U.S. Patent No. 6,138,270). Hsu does not teach or suggest a modification of Nilsson in view of Lawman et al. and Williams that would remedy the deficiencies of Nilsson in view of Lawman et al. and Williams that are outlined above. In particular, Hsu does not teach or suggest in a method of API generation for an electronic circuit, an API that includes a framework for “source programming and controlling” an “embedded

function” of a component of an electronic circuit through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” as recited in Claim 1 from which Claim 6 depends (Claims 10 and 19 from which Claims 15 and 24 depend respectively recite similar limitations).

As it regards the limitations of Claim 6 in particular, Applicants respectfully submit that nowhere in the Hsu reference is a method of API generation for an electronic circuit that includes the above discussed limitation of Claim 1 and further includes the limitation “wherein said new API further comprises assembly code files” as is recited in Claim 6 (Claims 15 and 24 recite similar limitations) taught or suggested.

Hsu discloses a dissimilar system for detecting differences between graphical programs. Hsu discloses that these differences are stored and displayed for the benefit of system users. Importantly, in Hsu the purpose of the detection of such differences between graphical programs is so that these differences may be graphically presented in a variety of ways. This functionality is a very different from that which is set forth in Claim 1 which involves providing a framework for source programming and controlling embedded functions of a component of a circuit that is designed and tested using an API. Applicants respectfully submit that nowhere in the Hsu reference is an API that includes a framework for source programming and controlling an embedded function of a component of an electronic circuit through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” taught or suggested as recited in Claim 1 from which Claim 6 depends (Claims 10 and 19 from which Claims 15 and 24 depend recite similar limitations). Consequently, the embodiments of the claimed invention as recited in Claims 6, 15 and 24 which are dependent on Claims 1, 10 and 19 respectively, are neither anticipated nor rendered obvious by Nilsson in view of Lawman et al., Williams and Hsu.

Claims 8, 17 and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nilsson, Lawman et al., Williams and McDonald (U.S. Patent No. 6,530,065). McDonald does not teach or suggest a modification of Nilsson in view of Lawman et al. and Williams that would remedy the deficiencies of Nilsson in view of Lawman et al. and Williams that are outlined above. In particular, McDonald does not teach or suggest in a method of API generation for an electronic circuit, an API that includes a framework for “source programming and controlling” an “embedded function” of a component of an electronic circuit through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” as recited in Claim 1 from which Claim 8 depends (Claims 10 and 19 from which Claims 17 and 26 depend respectively recite similar limitations).

With regard to the limitations of Claim 8 in particular, Applicants respectfully submit that nowhere in the McDonald reference is a method of API generation for an electronic circuit that includes the above discussed limitations of Claim 1 and further includes the limitations “wherein said data is substantially expressed in extensible markup language” as is recited in Claim 8 (Claims 17 and 26 recite similar limitations) taught or suggested.

McDonald discloses a dissimilar electrical circuit simulator that is provided by a web server over the Internet. The focus of the McDonald reference is the simulation of systems that couple at least one client computer to a server computer. This functionality is very different from that which is set forth in Claim 1 which involves providing a framework for source programming and controlling embedded functions of a component of a circuit that is designed and tested using an API. Applicants respectfully submit that nowhere in the McDonald reference is an API that includes a framework for source programming and controlling an embedded function of a component of an electronic circuit through user interaction with the API “wherein source code is compiled and built in response to the selection of a graphical element” taught or suggested as recited in Claim 1 from which Claim 8 depends (Claims 10 and 19 from which Claims 17 and 26

depend recite similar limitations). Consequently, the embodiments of the claimed invention as set forth in Claims 8, 17 and 26 are neither anticipated nor rendered obvious by Nilsson in view of Lawman et al., Williams and McDonald.

Conclusion

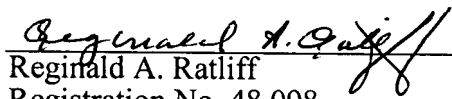
In light of the above-listed amendments remarks, the Applicants respectfully request allowance of the remaining claims.

The Examiner is urged to contact the Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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